

August 1993

# DEFENSE INVENTORY

## More Accurate Reporting Categories Are Needed

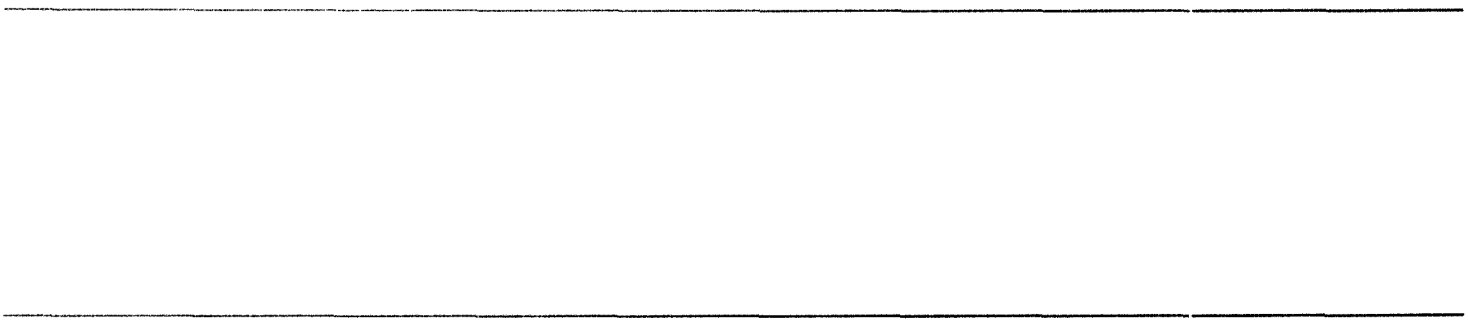


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**National Security and  
International Affairs Division**

B-250167

August 12, 1993

The Honorable John Glenn  
Chairman, Committee on Governmental Affairs  
United States Senate

Dear Mr. Chairman:

As of September 30, 1991, the Department of Defense (DOD) reported in its Supply System Inventory Report that it had about \$61 billion of on-hand inventory to meet wartime and peacetime inventory requirements. DOD refers to these requirements as approved acquisition objective inventory requirements. At your request, we analyzed DOD's on-hand approved acquisition objective inventory. Our specific objective was to determine whether the Supply System Inventory Report discloses the amount of secondary inventory needed to be centrally controlled to ensure uninterrupted supply and the amount of inventory in excess of those needs.

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**Background**

This report addresses DOD's secondary item inventory, which includes spare and repair parts, fuel, construction materials, clothing and textiles, and medical and dental supplies. DOD annually summarizes its secondary item inventory in its Supply System Inventory Report. The report is based on financial inventory and other inventory reports prepared by the military services and the Defense Logistics Agency (DLA). The report is used as a management tool to monitor changes in the level of inventory that is available for use.

The approved acquisition objective inventory reported in the Supply System Inventory Report represents items DOD defines as being needed to satisfy the wartime and peacetime requirements to equip and sustain U.S. and Allied Forces in accordance with DOD policies and plans.

To ensure that there are sufficient quantities of inventory to provide an uninterrupted supply, DOD has set a reorder point for most inventory items. When the total of on-hand and due-in inventory falls to or below the reorder point, an order is placed for additional inventory. Generally, the amount of inventory ordered is based on a replenishment formula that DOD calls an economic order quantity.<sup>1</sup> By placing an order for the quantities computed using the replenishment formula, DOD believes that it should be

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<sup>1</sup>We are reviewing DOD's use of this formula.

able to avoid running out of stock. DOD Instruction 4140.24 states that at any given time, on-hand and due-in inventory for an item should not exceed the quantity of inventory that makes up the reorder point and the quantity computed using the replenishment formula for the item.

Our analysis did not include the entire \$61 billion that DOD reported as approved acquisition objective inventory. We excluded such items as petroleum, oil, and lubricants; Marine Corps inventories; retail-level inventories; and DLA items with little or no demands, either because they represented a small part of DOD's overall inventory or because inventory reports showing reorder point and replenishment formula requirements were not available for them.

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## Results in Brief

Our analysis of \$53.5 billion of inventory DOD refers to as approved acquisition objective inventory showed that, using inventory requirements that DOD computed, about \$14.9 billion of the amount was not needed to be either on hand or due in as of the date of the inventory records analyzed. The inventory was not needed because it exceeded reorder point and replenishment formula requirements. In other words, only \$38.6 billion of the \$53.5 billion was needed to ensure an uninterrupted supply of materiel as required by DOD regulations.

Not only is it uncertain what portion of the \$14.9 billion of inventory may eventually be used, but in the past, changing requirements resulted in some inventory becoming excess to DOD's needs. As currently reported, the approved acquisition objective inventory (1) overstates that amount of inventory that is needed; (2) does not provide Congress, DOD management, and others an accurate description of the inventory DOD needs to ensure uninterrupted supply; and (3) does not disclose the extent to which DOD is holding inventory that may never be used and that is in excess of current needs.

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## On-Hand Inventory Is Greater Than Needed to Avoid Uninterrupted Supply

Not all of the inventory DOD says it has on hand to meet approved acquisition objective requirements is needed to provide uninterrupted inventory supply according to DOD regulations. The approved acquisition objective includes inventory that satisfies 17 different requirements. (These are described in detail in app. I.) The approved acquisition objective includes requirements related to the reorder point and the replenishment formula. By having enough inventory on hand and due in to meet these requirements, inventory managers should be able to avoid

out-of-stock situations. However, the inventory DOD reported as approved acquisition objective overstates the inventory that is needed to provide uninterrupted supply by including inventory that is in excess of the reorder point and replenishment formula requirements.

DOD Instruction 4140.24 states that at any given time, on-hand and due-in inventory should not exceed an item's reorder point and DOD's replenishment formula requirements. The instruction identifies eight types of inventory requirements that cumulatively represent the inventory reorder point as shown in table 1. The reorder point includes requirements intended to ensure that items are always available. For example, the lead-time requirements recognize that there is a lag between when an order is placed and when it is received. In addition, the safety level ensures against out-of-stock situations in case of minor interruptions in the replenishment process or unpredictable fluctuations in demand. Inventory managers place orders for items when the total of on-hand and due-in inventory falls to or below the reorder point. An additional requirement in the DOD instruction provides for buying items in quantities determined by a replenishment formula. That is, certain items are purchased in quantities that minimize the costs of purchasing and storing inventory.

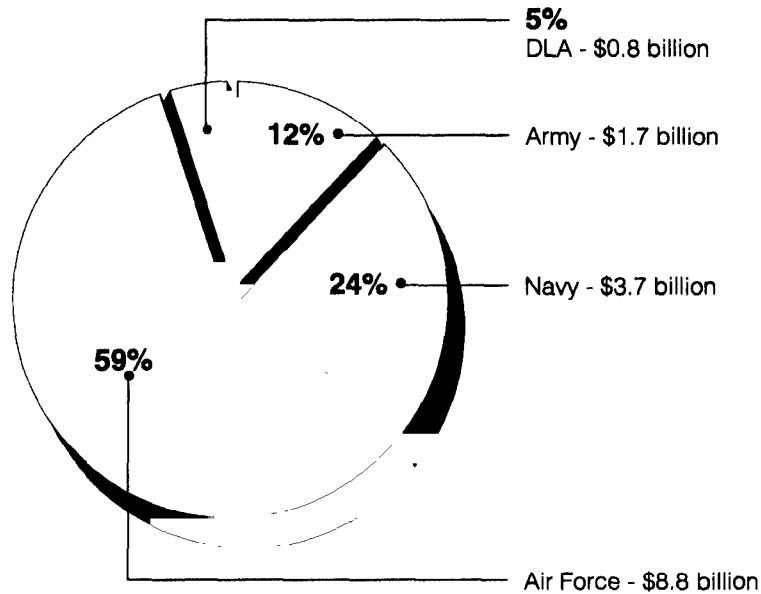
**Table 1: Reorder Point Requirements and On-Hand Inventory Available to Meet Them as of September 30, 1991**

Dollars in billions	
Type of requirement	On-hand inventory
Two types of war reserves that are authorized to be purchased	\$ 5.9
Customer requisitions that have not been shipped	2.8
Safety level	8.2
Insurance against inventory outages for selected items	3.7
Repair period issues	3.2
Two types of lead time	11.3
<b>Total on-hand inventory</b>	<b>\$ 35.1</b>

Our analysis of \$53.5 billion of on-hand inventory that relates to approved acquisition objective requirements showed that about \$35.1 billion would satisfy requirements associated with the reorder point and that about \$3.5 billion would satisfy the replenishment formula requirement. Together, the \$35.1 billion and the \$3.5 billion represent the portion of the \$53.5 billion that is needed, according to DOD's regulations, to ensure uninterrupted availability of inventory under DOD's current inventory management system.

Our analysis of the \$14.9 billion that exceeded the approved acquisition objective showed that about \$12 billion of the amount was related to repairable aviation parts. Figure 1 shows the \$14.9 billion by DOD component.

**Figure 1: Inventory That Exceeds Reorder Point and Replenishment Formula Requirements by DOD Component**



The reorder point and replenishment formula represent, on average, inventory requirements for a 1.9-year period. The \$14.9 billion represents additional inventory that is also classified as approved acquisition objective. This was demonstrated in a 1991 report,<sup>2</sup> where we discussed two items: Navy navigation lights and Air Force disks and hubs. The reorder point and replenishment formula requirements for the two items represented 5.1 and 8.1 years of supply, respectively. Both of these items had an additional 2.5 and 4.1 years of supply for a total of 7.6 and 12.1 years of supply, respectively. The additional years of supply exceeded DOD's reorder point and replenishment formula requirements and were classified by DOD as approved acquisition objective.

<sup>2</sup>Defense Inventory: Reports Need Comparable and Comprehensive Data (GAO/NSIAD-91-266, July 17, 1991).

## Inaccurate and Changing Requirements Affect the Amount of Needed Inventory

Our prior audit work has shown that inaccurate and changing requirements have resulted in billions of dollars of unneeded inventory. Prior audits identified problems relating to the accuracy of war reserve, safety level, lead time, and replenishment formula requirements. For example, in April 1993, we reported<sup>3</sup> that two Army commands overstated current operating and war reserve requirements by about \$1.6 billion.

Changing requirements may also result in some of the \$14.9 billion of inventory never being used or not being cost effective to store. For example, in March 1990, we reported<sup>4</sup> that requirements that changed due to delayed and canceled demands, and overstated replacement factors resulted in an estimated \$900 million of ship and submarine parts not being supported by requirements. Also, in March 1990, we reported<sup>5</sup> similar problems for DOD's aircraft parts.

DOD officials pointed out that items in excess of requirements should not be disposed of because of potential future use. We are not suggesting that DOD dispose of all items in excess of the reorder point and replenishment formula requirements without examining the cost-effectiveness of such a decision. However, our analysis shows that substantially more items are on hand than are needed to meet current supply needs. While a part of this inventory may be used in the future, some of it may never be used. Also, having inventory on hand before it is needed increases holding costs and the possibility that it is not cost effective to store it.

## Recommendation

We recommend that the Secretary of Defense separate in the Supply System Inventory Report the amount of inventory that it has on hand to satisfy its reorder point and replenishment formula requirements from additional inventory it is currently reporting as approved acquisition objective.

## Agency Comments and Our Evaluation

DOD disagreed with the findings and recommendation in a draft of this report. DOD advised us in meetings and in writing (see app. II) that the report focuses on inventory overages and not on a \$26-billion inventory shortage that existed on September 30, 1991. DOD believes that our

<sup>3</sup>Army Inventory: Current Operating and War Reserve Requirements Can Be Reduced (GAO/NSIAD-93-119, Apr. 14, 1993).

<sup>4</sup>Defense Inventory: Growth in Ship and Submarine Parts (GAO/NSIAD-90-111, Mar. 6, 1990).

<sup>5</sup>Defense Inventory: Growth in Air Force and Navy Unrequired Aircraft Parts (GAO/NSIAD-90-100, Mar. 6, 1990).

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recommendation creates a second definition for required inventory with which it does not agree and that implementing the recommendation would not alter the amount of inventory that DOD budgets for, orders, or holds.

We revised our draft recommendation to make it less restrictive on DOD and to make it clear that we are not proposing a second definition for required inventory, but are recommending that DOD provide additional information. Our recommendation does not alter the amount of inventory that DOD budgets for, orders, or holds. However, the recommendation does clarify the amount of DOD's reported on-hand inventory that is needed to provide uninterrupted supply. We also revised the report to incorporate data that DOD provided. At DOD's suggestion, we restated inventory figures in the report using latest acquisition cost. We disagree, however, with DOD's other comments.

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### The Inventory Shortage Is Not Relevant to Our Analysis

We did not analyze the inventory shortages that DOD cited because our objective was to determine what part of the inventory that DOD reported as its on-hand approved acquisition objective inventory was necessary to ensure uninterrupted supply. We are pointing out that for many items there is substantially more inventory on hand than is needed to meet DOD's own definition of the amount of inventory needed to ensure an uninterrupted inventory supply. Thus, the shortage cited by DOD was not relevant to our analysis.

While we agree that shortages exist for certain items, DOD has had long-standing and continuing problems with determining inventory requirements. In 1991,<sup>6</sup> we summarized nearly 100 of our and DOD audit reports, covering a 6-year period. The reports showed that DOD's supply system was replete with problems in the requirements determination process. A November 1992 report<sup>7</sup> showed that the problem persists. In spite of congressional expectations set forth in the Senate report accompanying the fiscal year 1992 DOD Appropriations Act, the Air Force did not make changes we recommended to its consumable item requirements computation system. We reported that had the Air Force made the changes, it could have reduced fiscal year 1993 requirements by \$508 million and related procurements by \$203 million.

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<sup>6</sup>Defense Inventory: Shortcomings in Requirements Determination Process (GAO/NSIAD-91-176, May 10, 1991).

<sup>7</sup>Air Force Requirements: Cost of Buying Aircraft Consumable Items Can Be Reduced by Millions (GAO/NSIAD-93-38, Nov. 18, 1992).



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## Scope and Methodology

We obtained information on DOD's secondary item inventory from the Office of the Secretary of Defense; the Departments of the Army, the Navy, and the Air Force; and DLA. We interviewed officials responsible for inventory management policies and reviewed applicable policies, procedures, and related documents.

We analyzed September 30, 1991, military service and DLA secondary inventory stratification reports that accounted for \$53.5 billion of inventory that relates to DOD's approved acquisition objective requirements. The inventory was valued at the latest acquisition cost. We did not validate the inventory requirements that DOD reported. We also did not include in our analyses such items as petroleum, oil, and lubricants; Marine Corps inventories; retail-level inventories; and DLA items with little or no demands. We excluded these inventories either because they represented a small part of DOD's overall inventory or because inventory stratification reports showing reorder point and replenishment formula requirements were not available for them. We also did not revalue items needing repair to reflect their repair costs. The inventory not included in our analysis and the adjustment for items needing repair account for the difference between the \$61 billion DOD reported in the Supply System Inventory Report and the \$53.5 billion that we analyzed. We conducted our work between July 1992 and November 1992 in accordance with generally accepted government auditing standards.

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As agreed with your office, unless you publicly announce this report's contents earlier, we plan no further distribution of this report until 30 days after its issue date. At that time, we will send copies to other interested committees and Members of Congress; the Secretaries of Defense, Army, Navy, and Air Force; and the Directors of DLA and the Office of Management and Budget. We will also make copies available to other parties upon request.

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Please contact me at (202) 512-8412 if you or your staff have any questions concerning this report. Major contributors to this report are in appendix III.

Sincerely yours,

A handwritten signature in cursive script, reading "Donna M. Heivilin".

Donna M. Heivilin, Director  
Defense Management and NASA Issues



# The Department of Defense's Approved Acquisition Objective Requirements

<b>Requirement</b>	<b>Description</b>
Prepositioned war reserve, protectable	War reserves are stocks that are stored in peacetime to satisfy increased wartime consumption. They are intended to sustain operations until resupply takes place. These items are funded.
Other acquisition war reserve, protectable	War reserves in addition to the prepositioned war reserves that are also funded.
Due-out	Material requisitioned by activities that is not available for issue, but is recorded as a commitment for issue or for purchase for direct delivery.
Memo future issue requirements— current year	Recurring and nonrecurring demands forecasted for the remainder of the current year.
Memo future issue requirements— apportionment year	Recurring and nonrecurring demands forecasted for the apportionment year.
Memo future issue requirements—budget year	Recurring and nonrecurring demands forecasted for the budget year.
Memo future issue requirements— extended year	Recurring and nonrecurring demands forecasted for an additional budget year.
Safety level	Stock on hand to permit continued operation in the event of minor interruption of normal replenishment or unpredictable fluctuation in demand.
Numerical stockage objective	Items that have intermittent demands, but because of essentiality of the items unavailability of the items is unacceptable.
Repair cycle	Inventory required to satisfy demands from the time an item is received for repair until the time it is returned ready for issue.
Administrative lead time	Inventory needed to satisfy demands between the time a procurement action is initiated and a contract is awarded.
Production lead time	Inventory used to satisfy demands between the time a contract is placed and the time the first items are received under the contract.
Procurement cycle	Stock that may be on hand or on order to cover the period between purchases.
Balance approved force acquisition objective	Requirements needed to provide for a total issue period of 24 months.
Balance, prepositioned war reserve	The unfunded balance of the prepositioned war reserve.
Balance, other acquisition war reserve	The unfunded balance of the other prepositioned war reserve.
Approved force retention stock	Additional items required to equip and support approved forces from the time war begins until production equals the item's demand.

# Comments From the Department of Defense



PRODUCTION AND  
LOGISTICS

**ASSISTANT SECRETARY OF DEFENSE**

WASHINGTON, DC 20301-6000

November 13, 1992

(L/SD)

Mr. Frank C. Conahan  
Assistant Comptroller General  
National Security and International  
Affairs Division  
U.S. General Accounting Office  
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "DEFENSE INVENTORY: More Accurate Reporting Categories are Needed," dated October 5, 1992 (GAO Code 398132) OSD Case 9227. The Department fundamentally disagrees with the draft report and requests this response be included in the final report.

The Department strongly disagrees with the GAO analysis. During meetings with the GAO on October 22, 1992, and November 2, 1992, these points were discussed in detail:

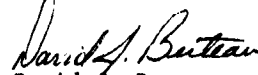
- The GAO analysis suggests that the last DoD annual inventory report overstated required inventory by about \$13 billion when, in fact, the DoD report actually understated DoD required inventory by at least that amount, even using the GAO definition of required inventory. A critical flaw in the GAO draft report is that it does not consider inventory shortages, rather, only what the GAO considers overages.
- The GAO recommendation would effectively create a second definition of required inventory, with which the Department does not agree. As explained in the DoD response to a similar report issued in July 1991 (GAO/NSIAD-91-266/OSD Case 8746), the GAO confuses the definition of what inventory is actually needed.
- The draft report includes significant factual errors concerning the inventory for which the Department budgets.

**Appendix II**  
**Comments From the Department of Defense**

The Department has separately provided additional technical changes to the GAO staff. The DoD detailed comments on the report's recommendation are provided in the enclosure.

The Department appreciates the opportunity to comment on the report and is pleased with the generally positive response provided by the GAO during discussions of these issues.

Sincerely,



David J. Berteau  
Principal Deputy  
Assistant Secretary of Defense  
for Production & Logistics

Enclosure

Appendix II  
Comments From the Department of Defense

GENERAL ACCOUNTING OFFICE (GAO) DRAFT REPORT - DATED OCTOBER 5, 1992  
(GAO CODE 398132), OSD CASE 9227

"DEFENSE INVENTORY: MORE ACCURATE REPORTING CATEGORIES ARE NEEDED"

DEPARTMENT OF DEFENSE COMMENTS ON THE GAO RECOMMENDATION

\* \* \* \* \*

**RECOMMENDATION:** The GAO recommended that the Secretary of Defense report in the Supply System Inventory Report the amount of DoD inventory that is needed to be on hand as of the date of the report. The GAO further recommended that as a minimum, the report should distinguish between inventory that the DoD needs to have on hand at the time of the report, and that the DoD may use in the future. (p.9/GAO Draft Report)

**DoD RESPONSE:** Nonconcur. The DoD annual inventory report actually understates required inventory; it does not overstate it as the draft audit report implies. The draft report has a critical flaw -- it makes no mention of inventory shortages, only what the GAO considers overages. As of September 30, 1991, the Department was short at least \$26 billion in inventory. That amount includes only inventory which was computed as required, but which was not on hand as of the report date, using the definition of required inventory that the GAO recommends. The \$26 billion shortage excludes shortages for which inventory was due-in, but not yet on hand as of the report date. Otherwise, the shortage amount would be even larger. Had the draft report properly considered inventory shortages, as well as what the GAO considers overages, it would have concluded that, on balance, the DoD required inventory was at least \$13 billion more than what it had on hand as of the date of the annual inventory report.

The Department also strongly disagrees with the recommendation because it would define required inventory differently for inventory reporting purposes and budgeting purposes. The DoD position has not changed since the GAO made a similar recommendation in the final report GAO/NSI ASD-91-165, "DEFENSE INVENTORY: Reports Need Comparable and Comprehensive Data," dated July 17, 1991 (GAO Code 398023), OSD Case 8746.

The Department has consistently defined required inventory as inventory which is projected to be used through the end of the budget year, and it applies the same definition for both the budgeting and reporting of inventories. The GAO defines only those stocks in use as of the day of the inventory report as required inventory. That definition is unreasonably restrictive and impractical. For

Enclosure

Now on p. 5.

**Appendix II**  
**Comments From the Department of Defense**

instance, by the GAO definition, inactive inventory would include: 1) any item needed the day after the date of the inventory report; 2) valid current year inventory requirements for which the Congress has already appropriated funds for procurement, and 3) inventory which the Department would need to include in its budget if it were not on hand. It is unclear what advantage is gained by creating a second definition for required inventory, as the GAO proposes, when it would not alter the amount of inventory that the Department budgets, orders or holds. Clearly there are disadvantages of having two definitions of required inventory, the most apparent of which is that an item might be considered required by one criterion and not the other.



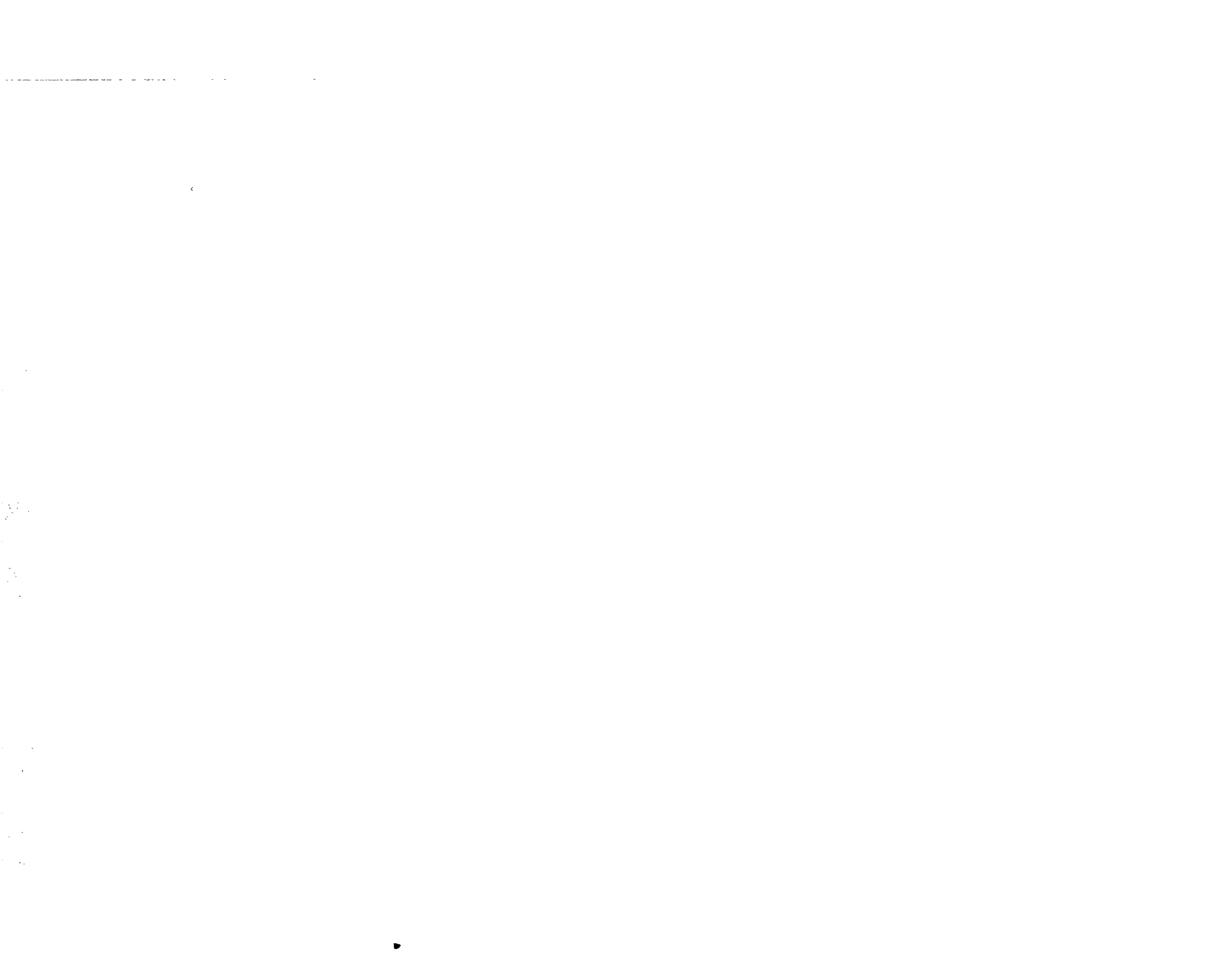
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# Major Contributors to This Report

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**National Security and  
International Affairs  
Division, Washington,  
D.C.**

**John D'Esopo, Assistant Director  
Uldis Adamsons, Adviser  
Louis V. Modliszewski, Evaluator-in-Charge  
Bruce Thomas, Evaluator  
Colin Chambers, Evaluator**



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